

# 7 Part E

## Overhaul and adjustments

### Two-barrel models 2SE and E2SE (Varajet)

This group of carburetors includes a variety of models all based on a similar design. The models included in this group are the E2SE and the 2SE two-barrel models.

The overhaul procedure is covered through a sequence of illustrations laid out in order from disassembly to reassembly and on-vehicle adjustments (removal and installation procedures are covered in Chapter 6). The captions presented with the illustrations will walk you through the entire procedure one component at a time.

The following illustration sequence depicts the overhaul of an E2SE model. Specific details may vary with carburetor part numbers because each carburetor is made to fit a specific application. Refer to the instruction sheet which comes with each overhaul kit. **Note:** Because of the large number of different models and variations of each model it is not always possible to cover all the differences in components during the overhaul procedure. Overhaul sections only deal with disassembly, reassembly and basic adjustments of a typical carburetor in that model group. If explanation about individual differences of parts are needed to clearly understand or choose the correct part for your application, refer to the exploded views or go to Chapter 3, Carburetor Fundamentals, for more details on components not discussed in the photograph sequence.

#### Warnings:

##### Gasoline

Gasoline is extremely flammable, so take extra precautions when you work on any part of the fuel system. Don't smoke or allow open flames or bare light bulbs near the work area, and don't work in a garage where a natural gas-type appliance (such as a water heater or clothes dryer) with a pilot light is present). A spark caused by an electrical short circuit, by two metal surfaces striking each other, or even by static electricity built up in your body, under certain conditions, can ignite gasoline vapors. Also, never risk spilling fuel on a hot engine or exhaust component. If you spill any fuel on your skin, rinse it off immediately with soap and water.

##### Battery

Always disconnect the battery ground (-) cable at the battery before working on any part of the fuel or electrical system.

##### Fire extinguisher

We strongly recommend that a fire extinguisher suitable for use on fuel and electrical fires be kept handy in the garage or workshop at all times. Never try to extinguish a fuel or electrical fire with water. Post the phone number for the nearest fire department in a conspicuous location near the phone.

#### Compressed air

When cleaning carburetor parts, especially when using compressed air, be very careful to spray away from yourself. Eye protection should be worn to avoid the possibility of getting any chemicals or debris into your eyes.

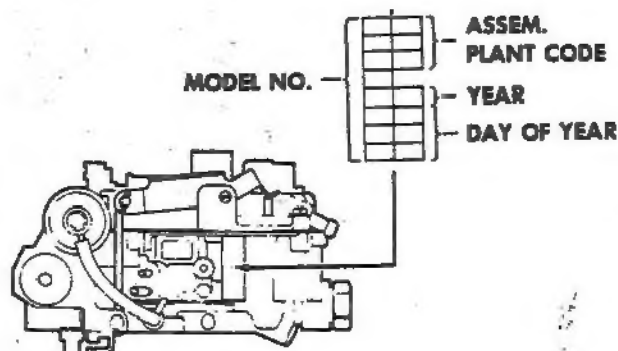
#### Lead poisoning

Avoid the possibility of lead poisoning. Never use your mouth to blow directly into any carburetor component. Small amounts of Tetraethyl lead (a lead compound) become deposited on the carburetor over a period of time and could lead to serious lead poisoning. Check passages with compressed air and a fine-tipped blow gun or place a small diameter tube to the component and blow through the tube to be sure all necessary passages are open.

#### Disassembly

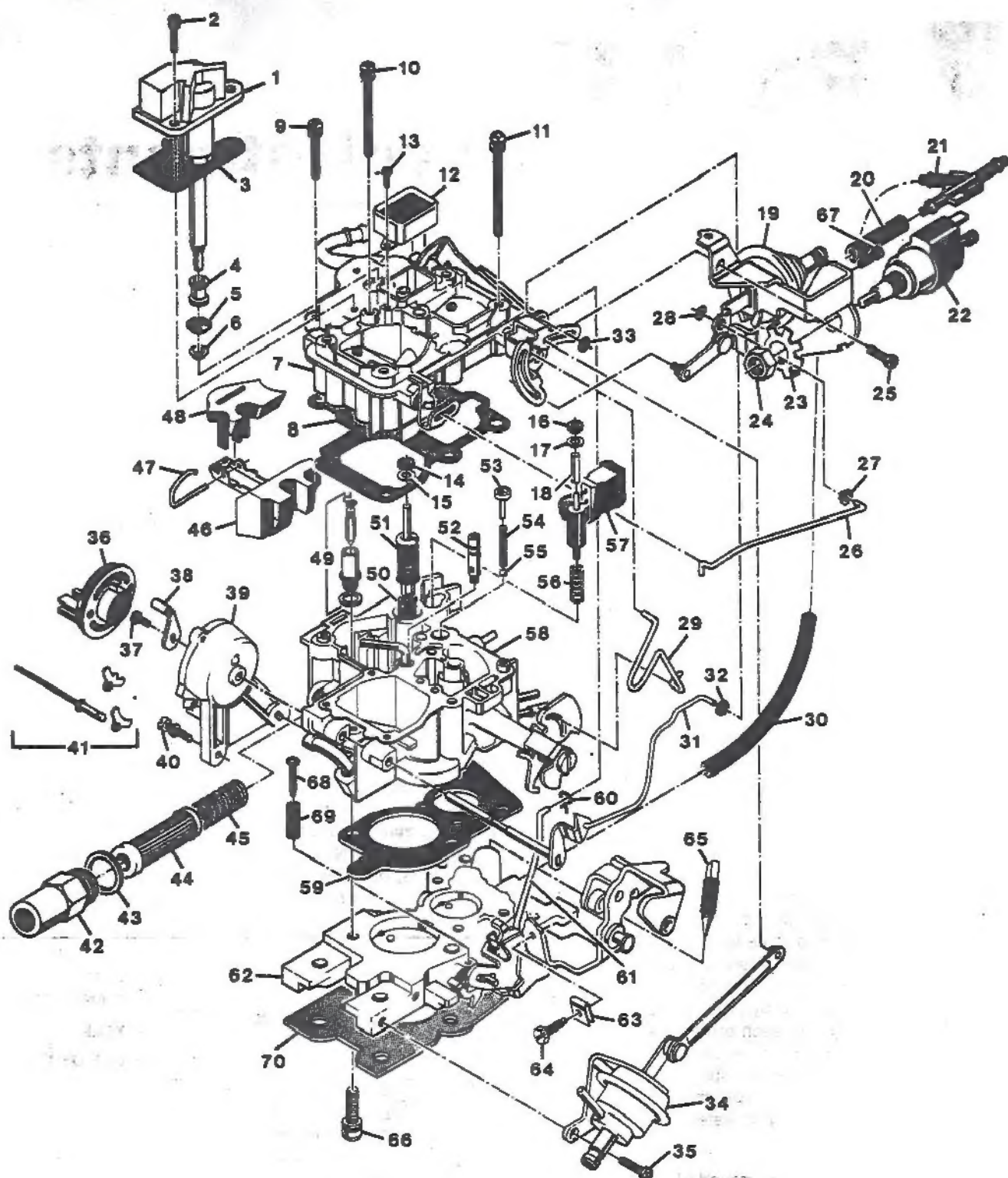
Before disassembling the carburetor, refer to Chapter 7 Part A to familiarize yourself with the various inspection and service procedures you'll perform as you overhaul the carburetor.

Also, make notes or diagrams of levers or linkage locations, slots or holes that the linkage connects with and anything you may feel could be difficult to remember later on during reassembly. **Note:** Remember that on extremely dirty carburetors, overnight cleaning may be required and that reassembly may not be possible until the next day.



**7E.1** All Varajet models have their identification numbers located on the carburetor body in the same location. Write the model number down and present it to the counter person when buying parts or a rebuild kit





7E.2a E2SE carburetor - exploded view

**Air horn parts**

- 1 Mixture control (M/C) solenoid
- 2 Screw - M/C solenoid
- 3 Gasket - M/C solenoid
- 4 Spacer - M/C solenoid
- 5 Seal - M/C solenoid
- 6 Retainer - M/C solenoid seal
- 7 Air horn assembly
- 8 Gasket - air horn
- 9 Screw - air horn, short (2)
- 10 Screw - air horn, long (3)
- 11 Screw-airhorn, large
- 12 Vent stack
- 13 Screw - vent stack (2)
- 14 Seal - pump plunger
- 15 Retainer - pump plunger seal
- 16 Seal - TPS plunger
- 17 Retainer - TPS plunger seal
- 18 Plunger - TPS

**Choke parts**

- 19 Vacuum break and bracket assembly - primary
- 20 Hose - vacuum break connecting
- 21 Tee - vacuum break connecting
- 22 Solenoid- idle speed
- 23 Retainer - idle speed solenoid
- 24 Nut - idle speed solenoid
- 25 Screw - vacuum break bracket attaching
- 26 Link - air valve
- 27 Bushing - air valve link
- 28 Retainer - air valve link
- 29 Link - fast idle cam
- 30 Hose - vacuum break
- 31 Intermediate choke shaft/lever/link assembly
- 32 Bushing - intermediate choke link
- 33 Retainer - intermediate choke link
- 34 Vacuum break and bracket assembly - secondary
- 35 Screw- vacuum break attaching (2)

- 36 Choke - cover and coil assembly
- 37 Screw - choke lever attaching
- 38 Choke lever and contact assembly
- 39 Choke housing
- 40 Screw - choke housing attaching (2)
- 41 Stat cover retainer kit

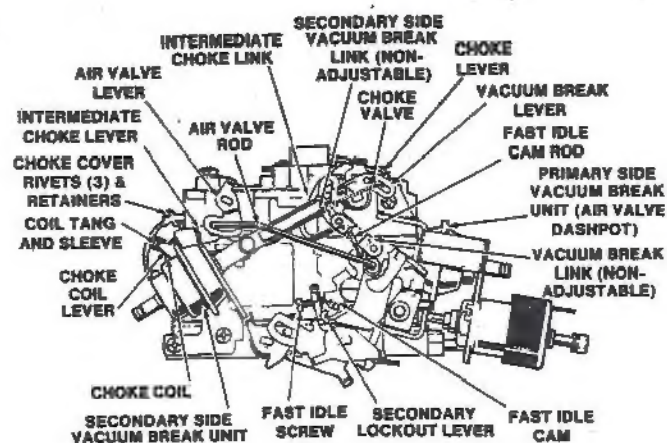
**Float bowl parts**

- 42 Nut - fuel inlet
- 43 Gasket - fuel inlet nut
- 44 Filter - fuel inlet
- 45 Spring - fuel filter
- 46 Float assembly
- 47 Hinge pin - float
- 48 Insert - float bowl
- 49 Needle and seat assembly
- 50 Spring - pump return
- 51 Pump assembly
- 52 Metering jet
- 53 Retainer - pump spring and check ball
- 54 Spring - pump check ball
- 55 Ball - pump check
- 56 Spring, TPS
- 57 Throttle Position Sensor (TPS)
- 58 Float bowl assembly
- 59 Gasket - float bowl

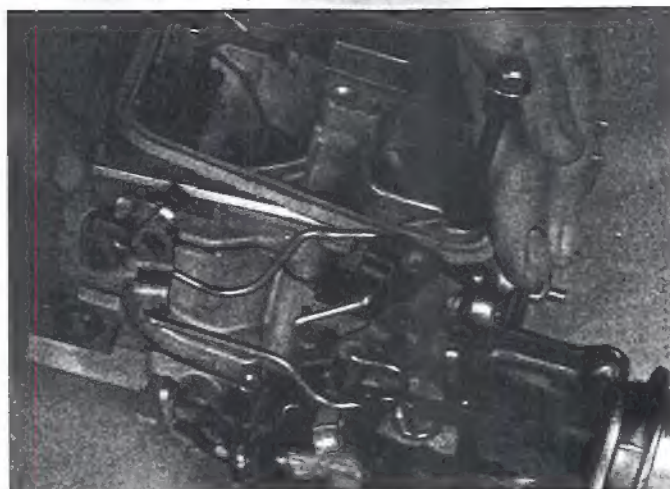
**Throttle body parts**

- 60 Clip - pump rod
- 61 Pump rod
- 62 Throttle body assembly
- 63 Clip - cam screw
- 64 Screw - fast idle cam
- 65 Idle needle and spring
- 66 Screw - throttle body attaching
- 67 Screw - vacuum break bracket attaching (new)
- 68 Screw- idle stop
- 69 Spring - idle stop screw
- 70 Gasket- intake manifold





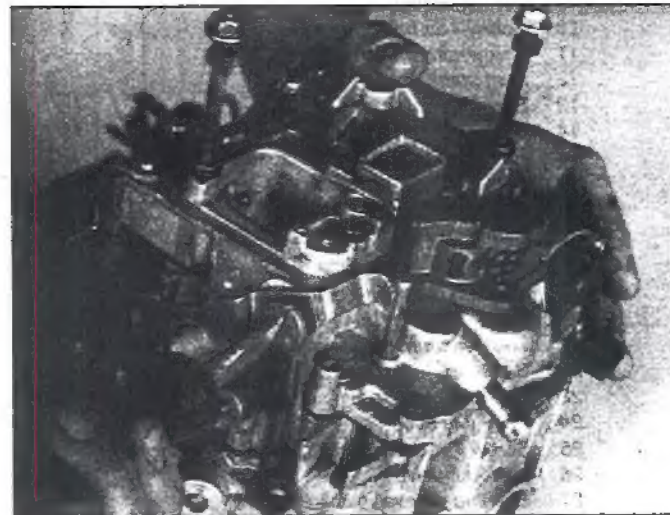
7E.3 E2SE carburetor choke system



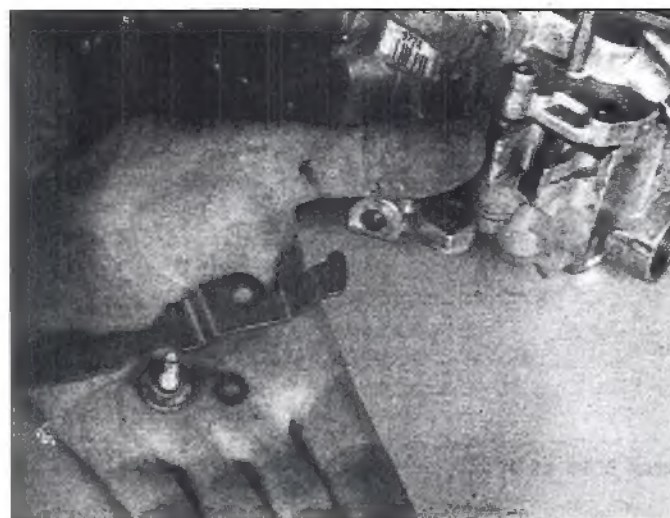
7E.4 Remove the air cleaner gasket from the top of the air horn. This will be replaced with a new one when the carburetor is reinstalled on the car.



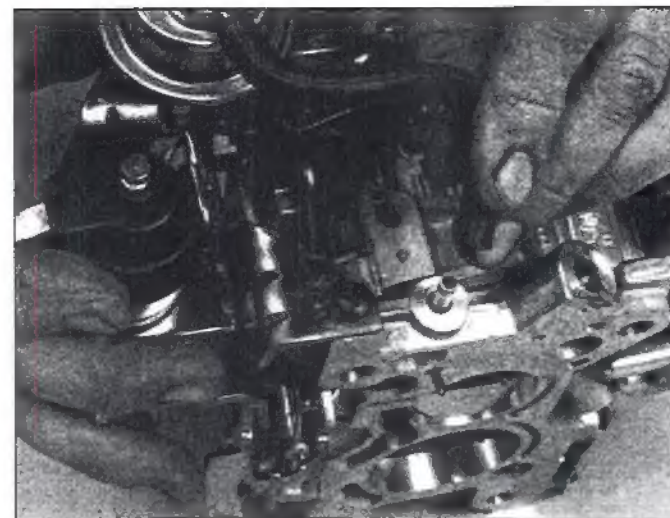
7E.5 Remove the fuel inlet nut, fuel filter and spring



7E.6 Remove the accelerator pump lever attaching screw

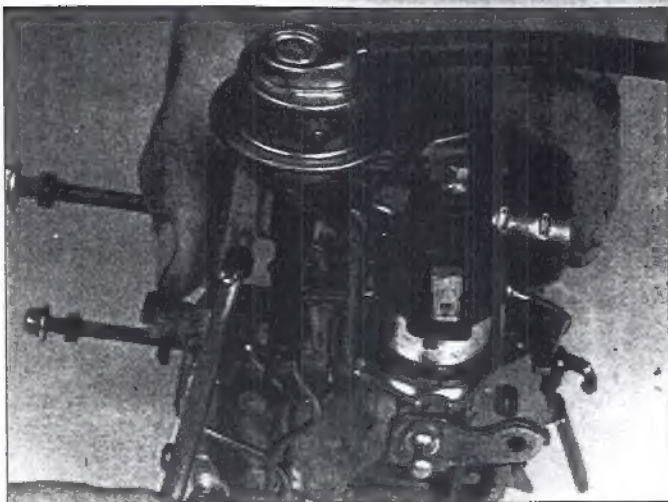


7E.7 Disconnect the pump rod from the pump lever and remove the pump lever



7E.8 Disconnect the primary vacuum break diaphragm hose from the throttle body

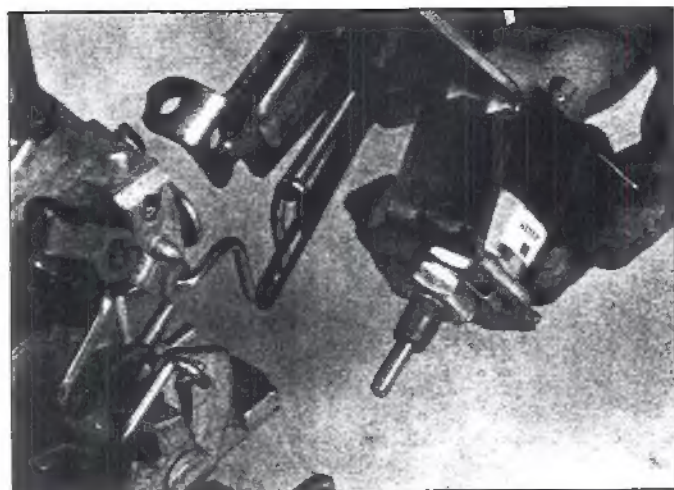




**7E.9** Remove the screws that retain the idle speed solenoid/vacuum break diaphragm bracket



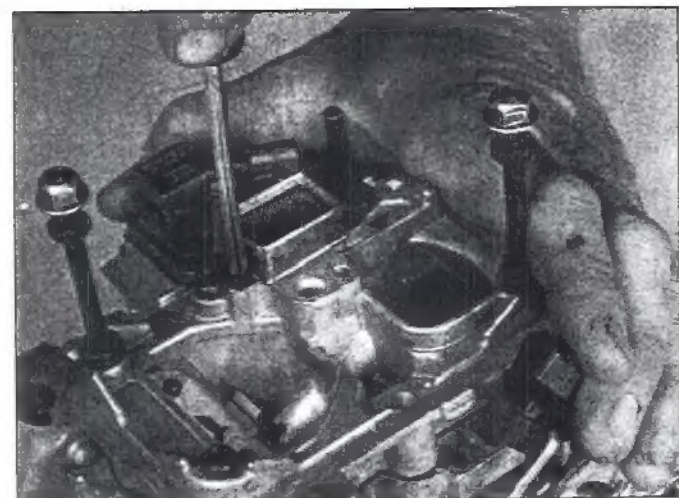
**7E.10** Lift off the idle speed solenoid/vacuum break diaphragm assembly and disconnect the air valve link from the vacuum break plunger (repeat this step for the secondary vacuum break assembly, disconnecting the link from the slot in the choke lever)



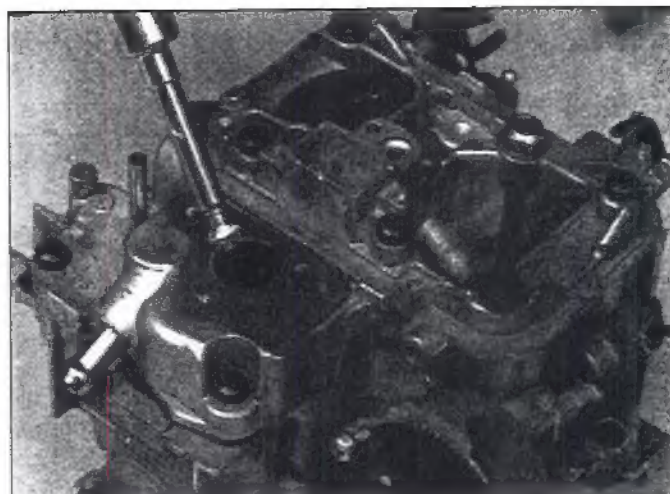
**7E.11** Disconnect the vacuum break and air valve links from the levers - it is not necessary to disconnect the links from the vacuum break plungers unless either the rods or the vacuum break units are being replaced.



**7E.12** Pry off the clip that retains the intermediate choke link to the choke lever and separate the link from the lever

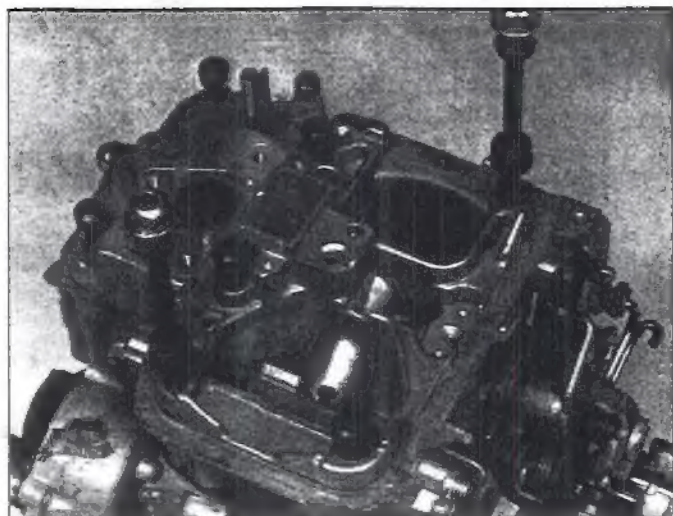


**7E.13** Remove the screws that retain the ventscreen assembly to the air horn and lift off the assembly

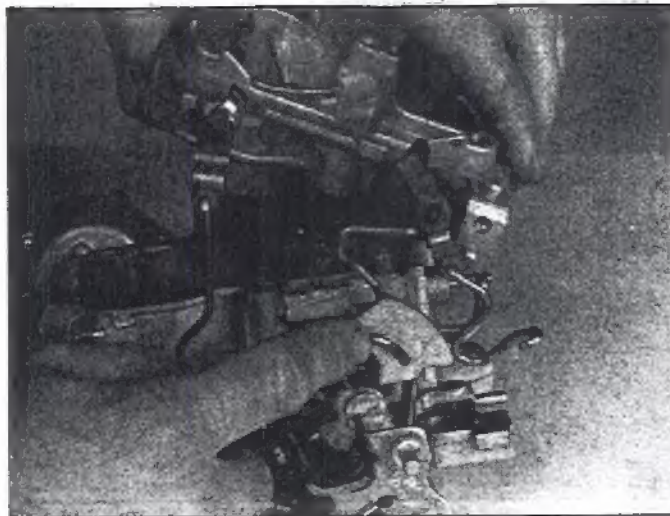


**7E.14** Remove the screws that retain the mixture control solenoid and, using a slight twisting motion, lift the solenoid out of the air horn

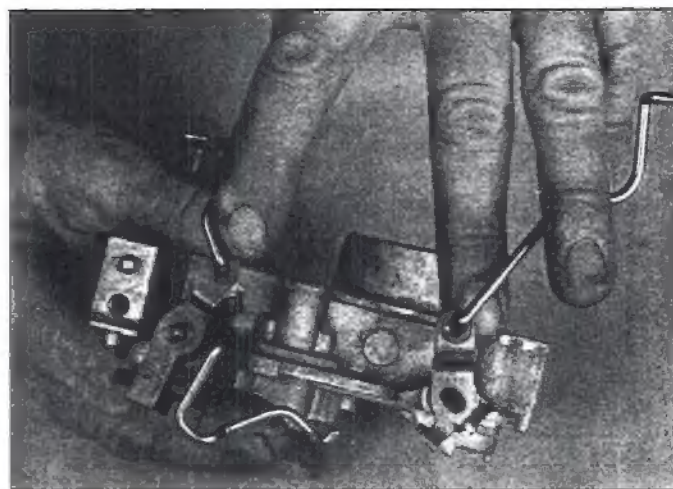




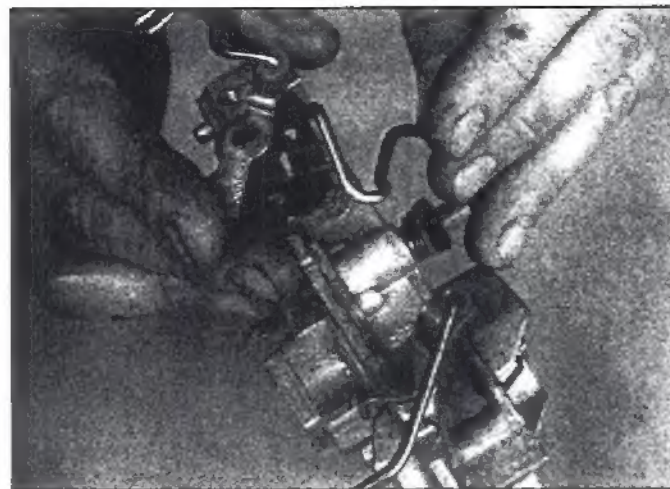
7E.15 Remove the screws securing the air horn to the float bowl, noting their lengths and positions to simplify installation



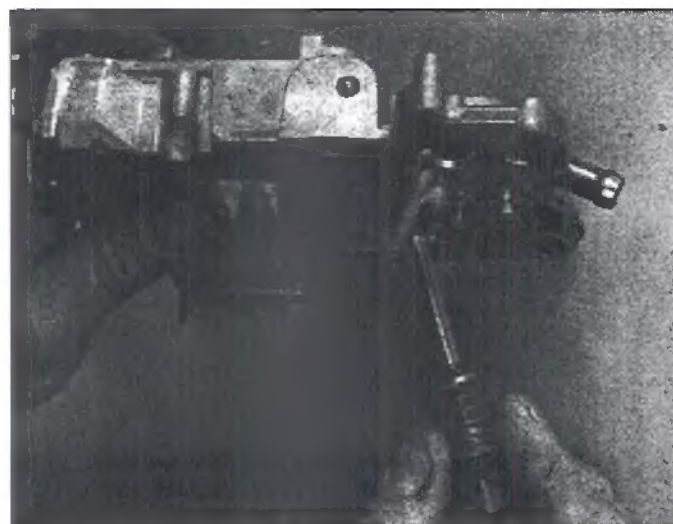
7E.16 Rotate the fast idle cam up, lift off the air horn and disconnect the fast idle cam link from the fast idle cam



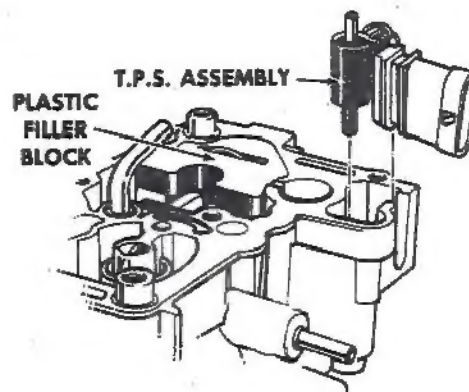
7E.17 The links attached to the air horn need not be removed unless their replacement or removal is required to service other components



7E.18 Disengage the fast idle cam link from the choke lever and save the bushing for reassembly

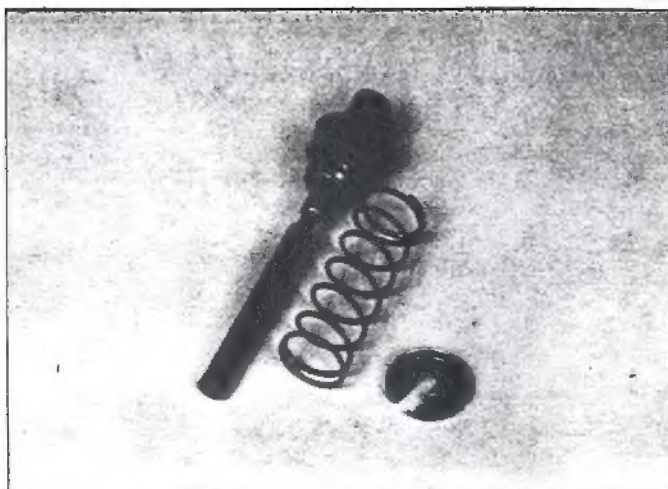


7E.19 Remove the pump plunger from the air horn or the pump well in the float bowl

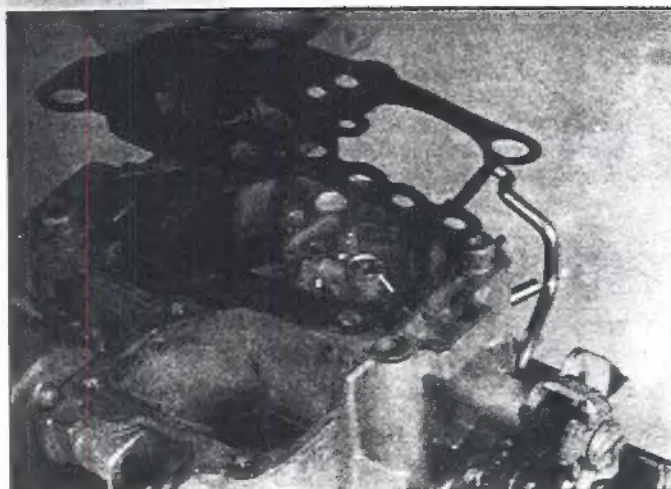


7E.20 To remove the Throttle Position Sensor (TPS), push up from the bottom of the electrical connector and remove the TPS and connector assembly from the float bowl - also, remove the spring from the bottom of the float bowl)

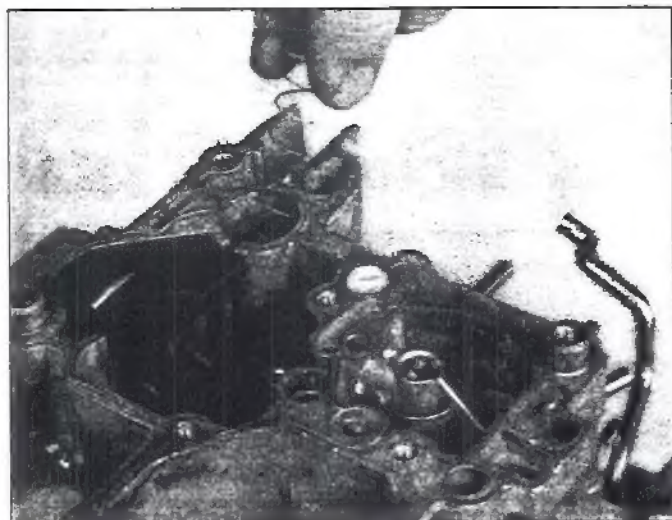




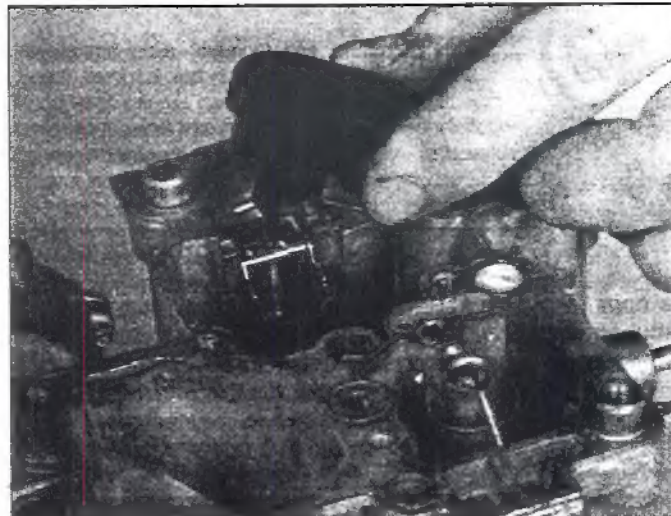
7E.21 Compress the pump plunger spring and separate the spring retainer clip and spring from the piston



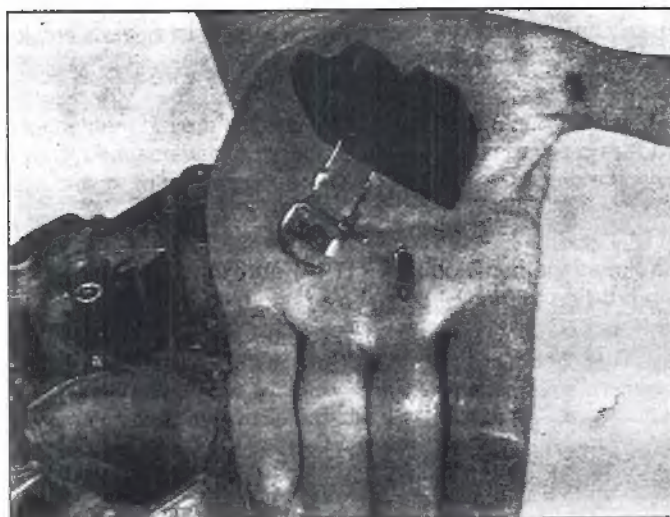
7E.22 Remove the gasket from the float bowl



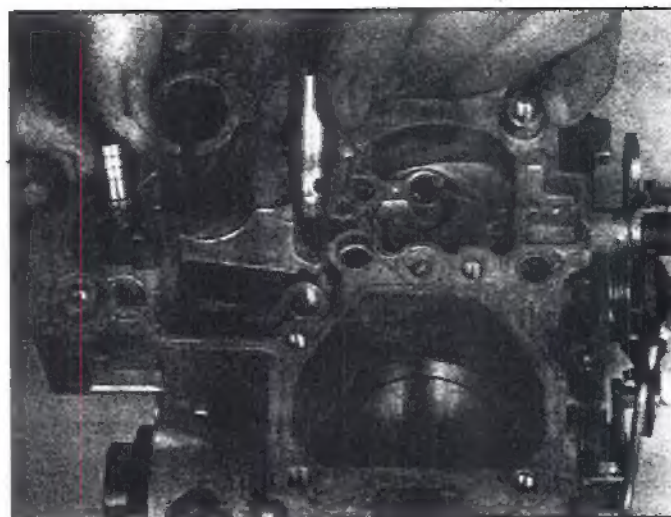
7E.23 Remove the accelerator pump return spring from the pump well



7E.24 Remove the plastic filler block that covers the needle-and-seat assembly

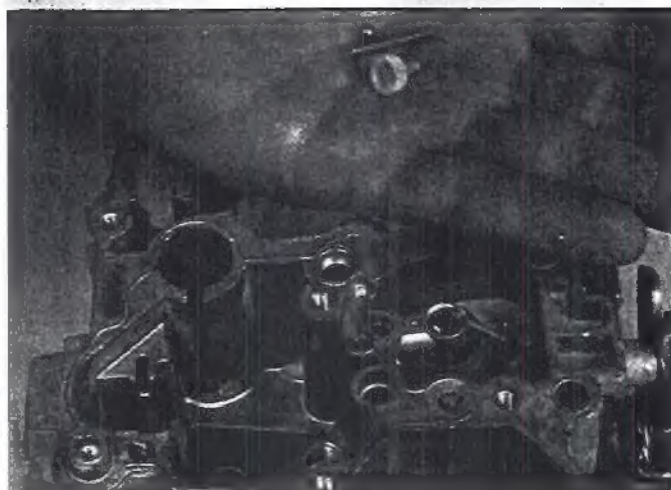


7E.25 Remove the float, the inlet needle and the stabilizing spring (if used) by pulling up on the hinge pin

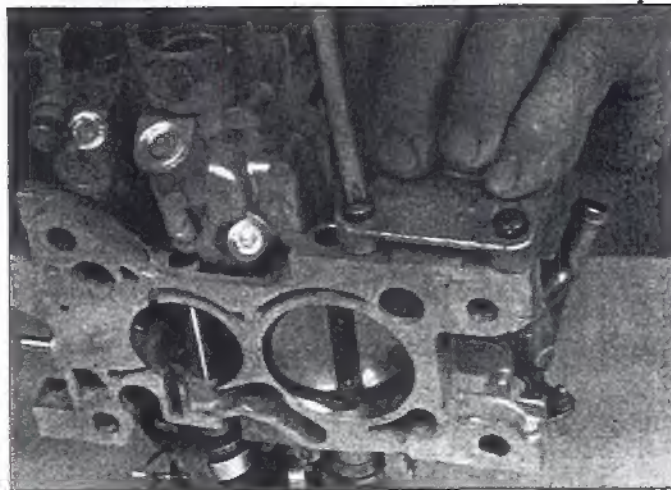


7E.26 Unscrew the needle seat and gasket (left) and the extended metering jet (right) from the float bowl. On feedback versions (E2SE), the lean mixture screw is contained in the metering jet.

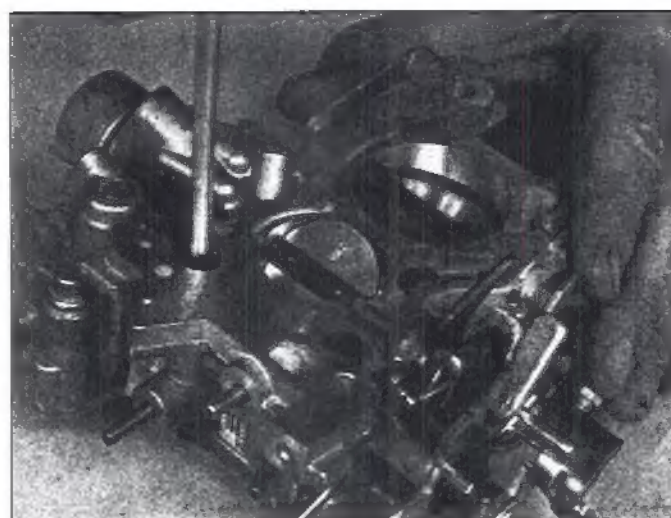




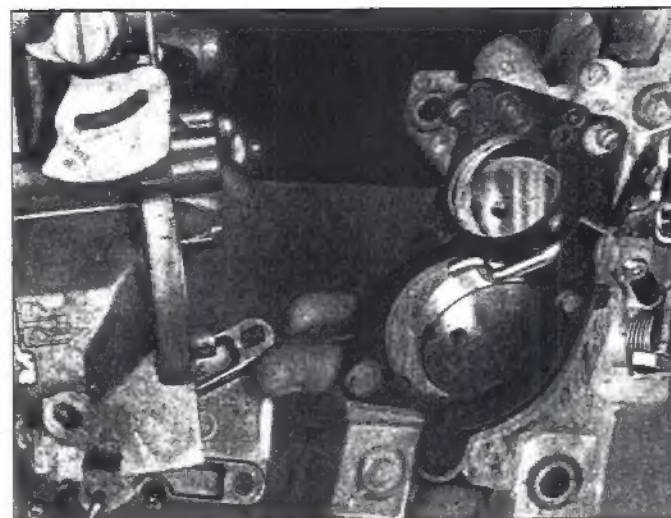
**7E.27** Using needle-nose pliers, pull out the plastic retainer and remove the pump discharge spring and check ball (do not pry on the retainer to remove it)



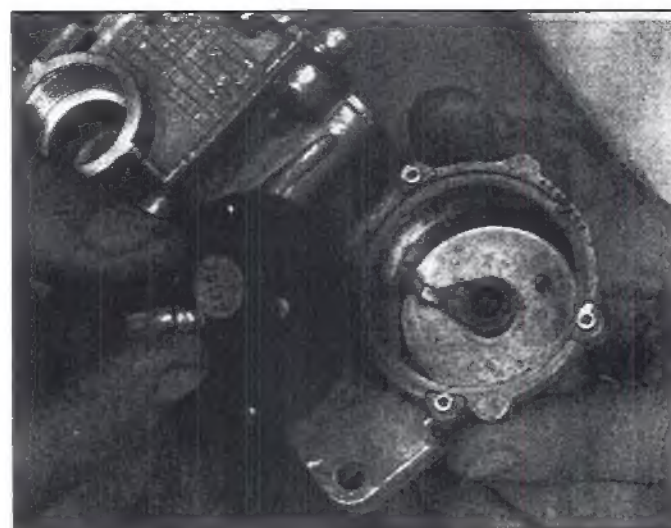
**7E.28** Remove the screws that retain the choke housing to the throttle body



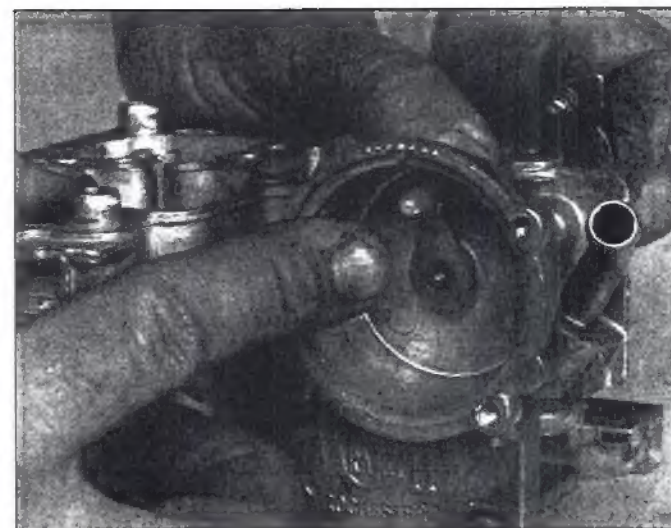
**7E.29** Remove the screws that retain the float bowl to the throttle body



**7E.30** Separate the float bowl from the throttle body

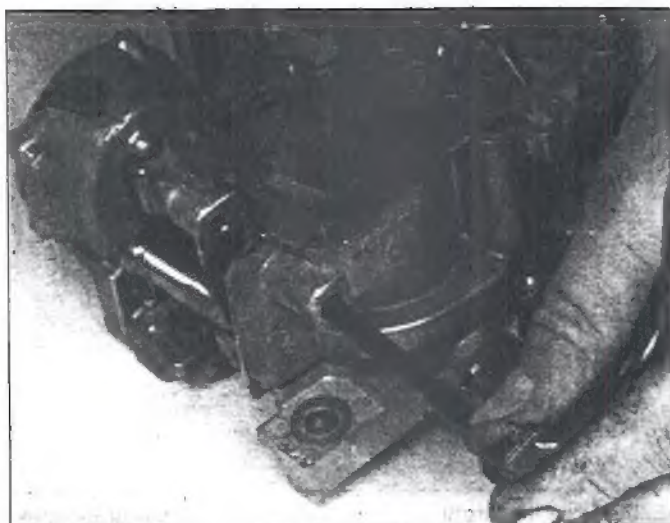


**7E.31** Carefully file the heads off the pop rivets that retain the choke cover to the choke housing, remove the cover and tap out the remainder of the rivets

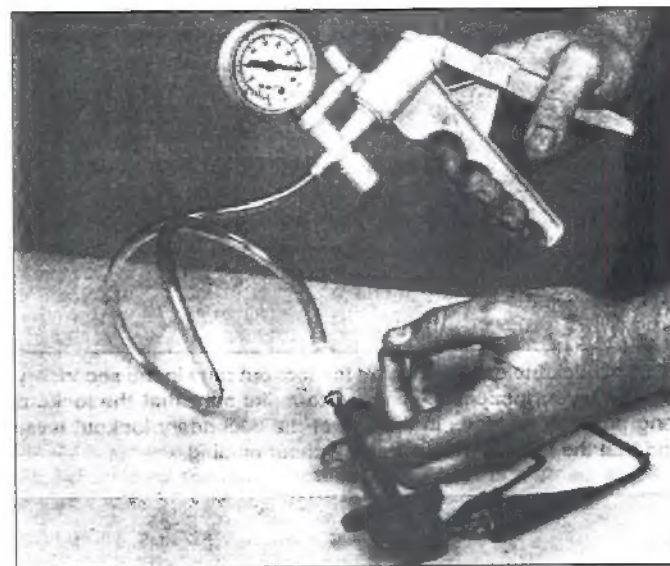


**7E.32** Remove the choke lever screw and lift out the lever



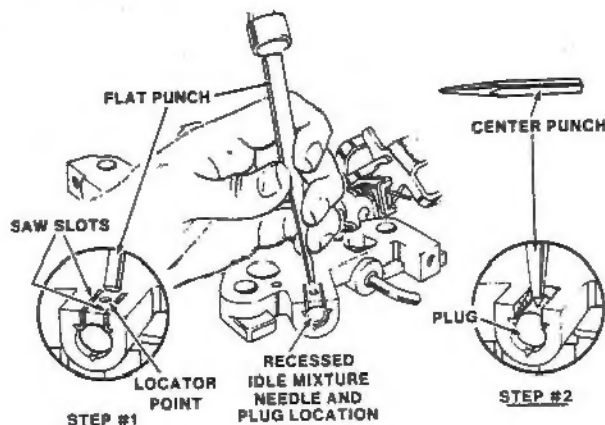


7E.33 Slide the intermediate shaft and lever assembly out of the float bowl



7E.35 Check the mixture control solenoid in the following manner:

- 1 Connect one end of a jumper wire to either end of the solenoid connector and the other end to the positive terminal of the battery.
- 2 Connect another jumper wire between the other terminal of the solenoid connector. Don't connect the other end of the jumper wire to the negative terminal of the battery yet.
- 3 Remove the rubber seal and retainer from the end of the solenoid stem and attach a hand-held vacuum pump to it.
- 4 Energize the solenoid by connecting the jumper wire to the negative terminal of the battery (this will put the solenoid in the lean position), apply at least 25 in-Hg of vacuum and time the leak-down rate from 20 to 15 in-Hg. The leak-down rate should not exceed 5 in-Hg in five seconds. If leakage exceeds that amount, replace the solenoid.
- 5 To check if the solenoid is sticking in the down position, again apply about 25 in-Hg of vacuum to it, then disconnect the jumper lead to the battery and watch the pump gauge reading. It should fall to zero in less than one second.



7E.34 The final step in disassembly involves the idle mixture screw. It is recessed in the throttle body and sealed with a hardened steel plug.

Using a hacksaw, make two parallel cuts in the throttle body on either side of the locator mark. The cuts should be deep enough to touch the steel plug, but should not extend more than 1/8-inch beyond the locator point. Position a flat punch at a point near the ends of the saw marks. Holding it at a 45-degree angle, drive it into the throttle body until the casting breaks away, exposing the steel plug. Use a center-punch to make an indentation in the steel plug. Holding the punch at a 45-degree angle, drive the plug from the throttle body casting.

Remove the idle mixture screw and spring using the tool that properly fits the type of mixture screw that is in your carburetor.

### Cleaning and inspection

Refer to Chapter 7, Part A for information on "dips" and solvents used in cleaning. Remember not to place the float or any other plastic or rubber parts into a dip tank, since the chemicals will damage the parts. After cleaning (which usually requires an overnight soak in a dip tank), blow out all passages in the carburetor with compressed air. **Warning:** Wear eye protection! Inspect the cleaned parts to be sure there's no gasket material remaining on any surfaces and the surfaces are not damaged or warped. Inspect the float to make sure it isn't saturated with fuel. All parts must be completely dry before beginning reassembly.

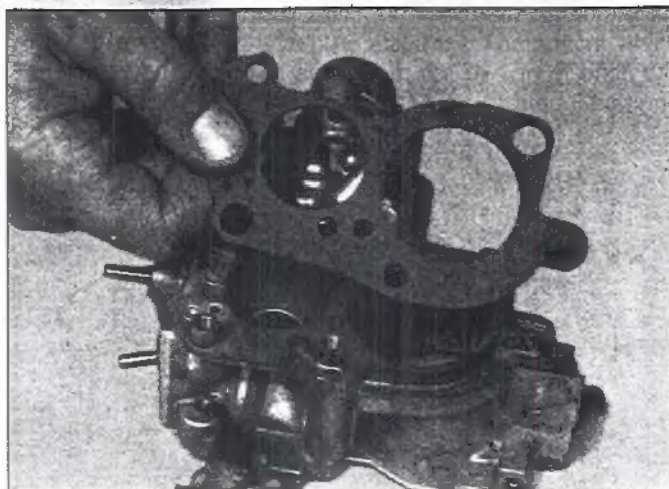
### Reassembly

If the idle mixture screw and spring have been removed, place the spring on the screw and install the screw, lightly seating the needle, then back it out three turns. This will provide a preliminary idle mixture adjustment. Final idle mixture adjustment must be made with the engine running.

#### Tip:

When reassembling the carburetor, lightly spray gaskets with silicone lubricant. This will help eliminate the kind of sticking you saw as you disassembled your carburetor.

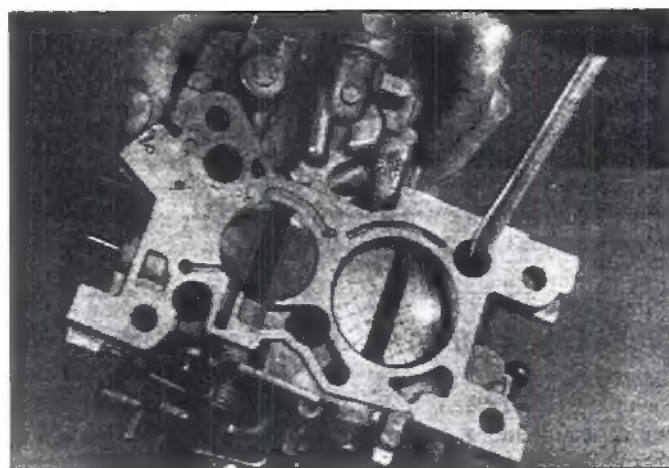




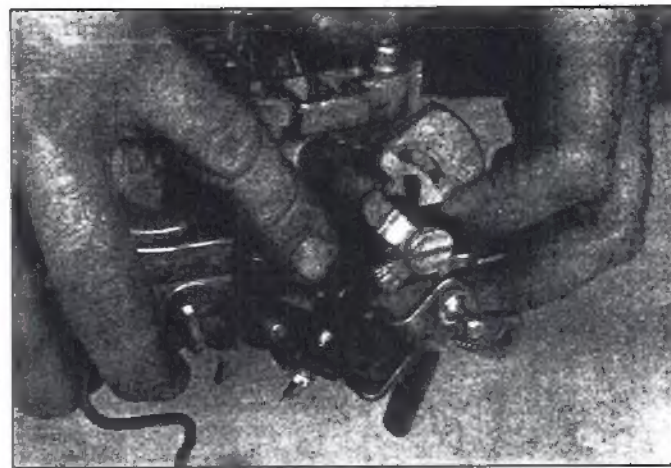
**7E.36** Compare all old and new gaskets back-to-back to make sure they match perfectly. Check especially that all the necessary holes are present and in the proper positions in the new gaskets. Install the gasket on the bottom of the float bowl.



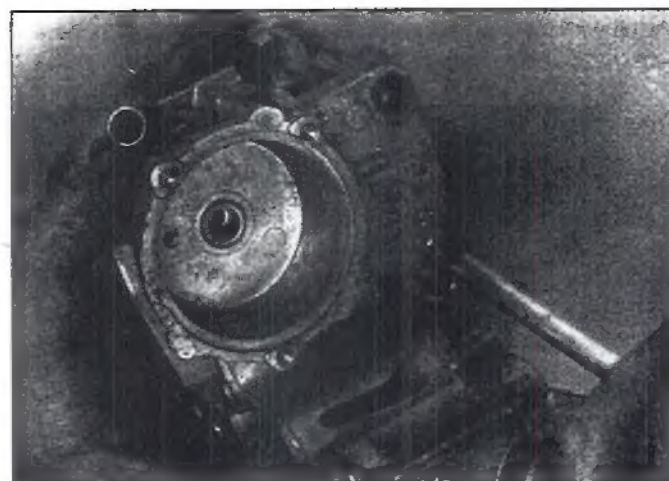
**7E.37** Mount the throttle body on the float bowl so it is properly installed over the locating dowels on the bowl . . .



**7E.38** . . . then install the throttle body-to-float bowl attaching screws, tightening them evenly and securely. Be sure the steps on the fast idle cam face toward the fast idle screw on the throttle lever when installed.



**7E.39** Check the engagement of the lockout tang in the secondary lockout lever. Inspect the linkage to make sure that the lockout tang properly engages in the slot of the secondary lockout lever and that the linkage moves freely without binding.



**7E.40** Attach the choke housing to the throttle body

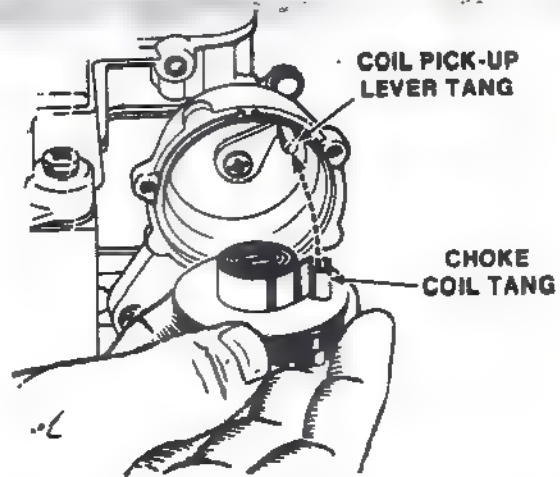


**7E.41** Make sure the locating lug on the rear of the housing sits in the recess in the float bowl. Install the intermediate choke shaft and lever assembly in the float bowl by pushing it through from the throttle lever side.

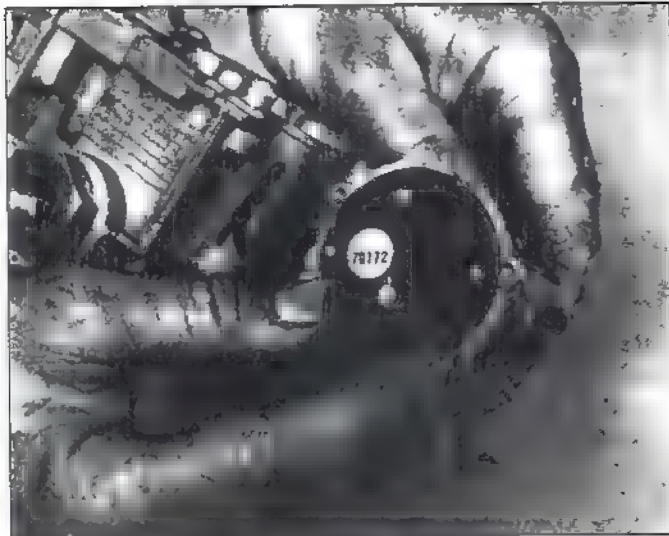




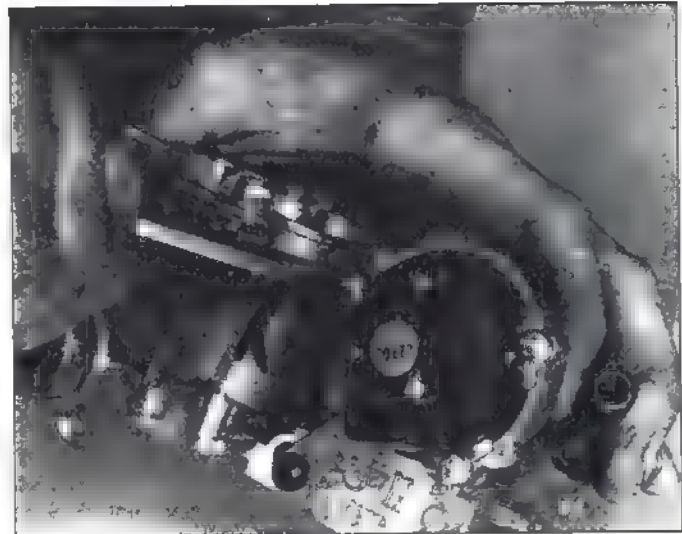
**7E.42** Position the intermediate choke lever in the UP position and install the thermostatic coil lever on the end sticking into the choke housing. The coil lever is properly aligned when the coil pick-up tang is in the 12 o'clock position. Install the screw in the end of the intermediate shaft to secure the coil lever.



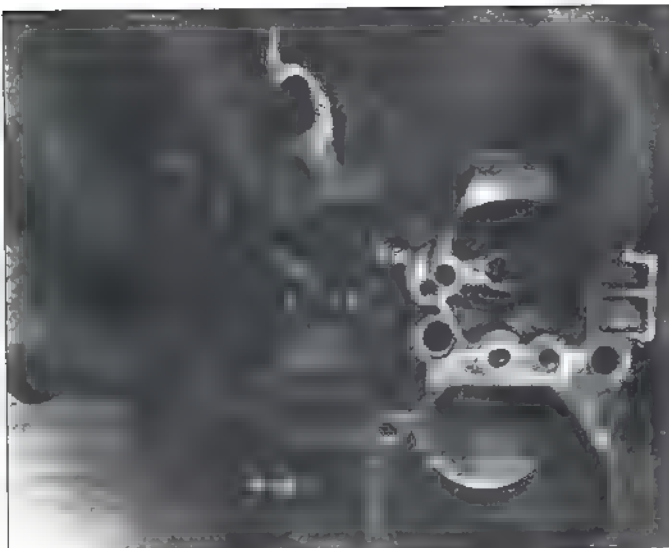
**7E.43** Place the fast idle screw on the highest step of the fast idle cam, then install the choke cover on the housing, making sure the tang on the choke coil engages with the lever



**7E.44** Be sure the notch in the choke cover is aligned with the raised casting projection on the housing cover flange



**7E.45** The three self-tapping screws supplied in the overhaul kit are used in place of the original pop rivets to secure the choke cover and coil assembly to the choke housing



**7E.46** Install the main metering jet in the bottom of the float chamber.

Also install the pump discharge check ball and spring in the passage next to the float chamber. Place a new plastic retainer in the hole so that its end engages the spring and tap it lightly into place until the retainer top is flush with the bowl surface.

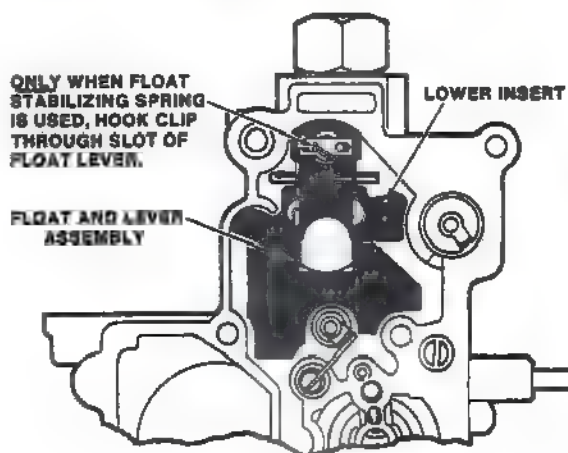




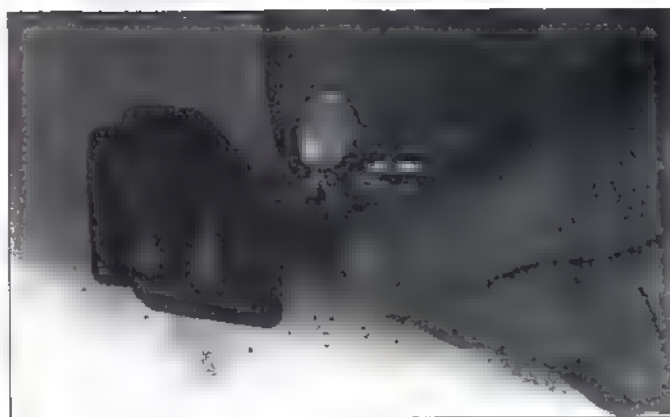
7E.47 Install the needle seat, using a new gasket



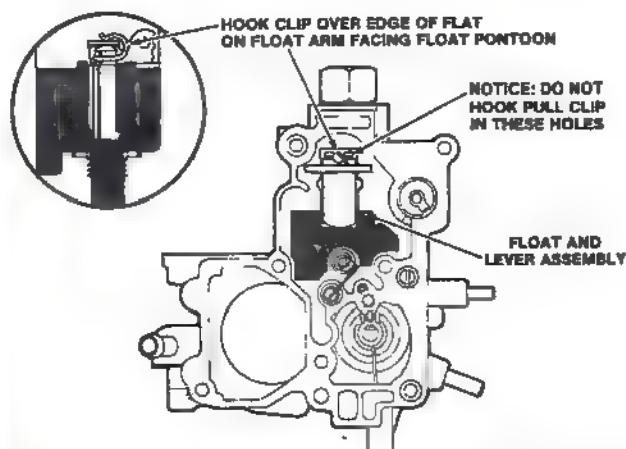
7E.49 Install the float hinge pin in the float arm and hook the inlet needle onto the arm as well



7E.51 Correct installation of the inlet needle pull clip on E2SE floats with a stabilizing spring



7E.48 Prior to installation, bend the float arm up slightly at the point shown

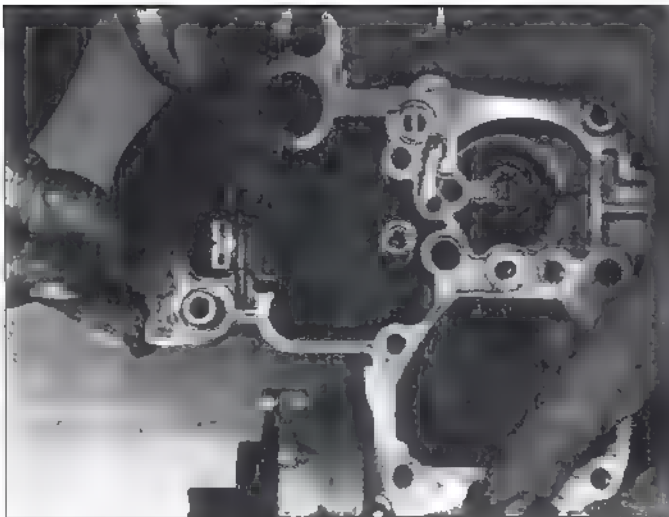


7E.50 Correct installation of the inlet needle pull clip on E2SE floats without a stabilizing spring



7E.52 To adjust the float level, hold the float hinge pin firmly in place and push down on the float arm at the outer end until the inlet needle is seated. Place the float height gauge (or a small rule, graduated in  $\frac{1}{64}$ " increments) against the top of the float and measure the distance to the top of the float bowl surface. Bend the float arm as necessary to achieve the proper measurement. Note: Refer to the specifications sheet furnished with the overhaul kit for the proper float level for your vehicle.





**7E.53** Install the plastic filler block over the needle-and-seat and the hinge pin so it's flush with the float bowl surface

Also at this time, if the carburetor is equipped with a Throttle Position Sensor, install the TPS return spring in the bottom of the well in the float bowl. Then install the TPS and connector assembly by aligning the groove in the electrical connector with the slot in the float bowl. When properly installed, the assembly should sit below the float bowl surface.



**7E.55** Install the accelerator pump return spring in the pump well

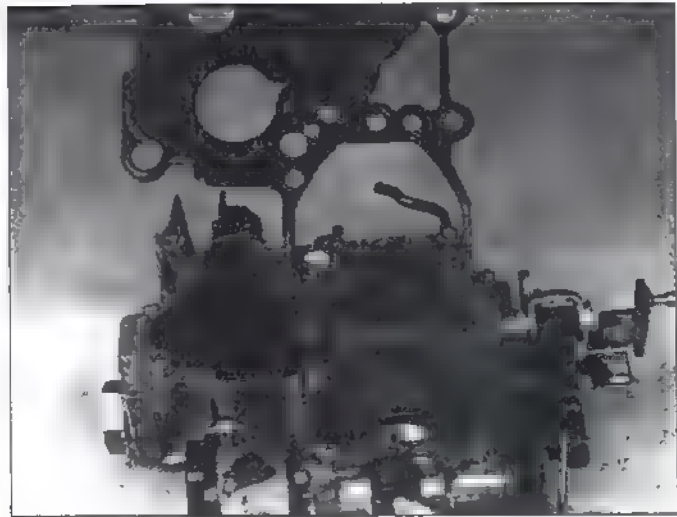
**7E.57** Engage the fast idle cam link in the fast idle cam prior to installation of the air horn

Install the fast idle cam rod in the lower hole of the choke lever.

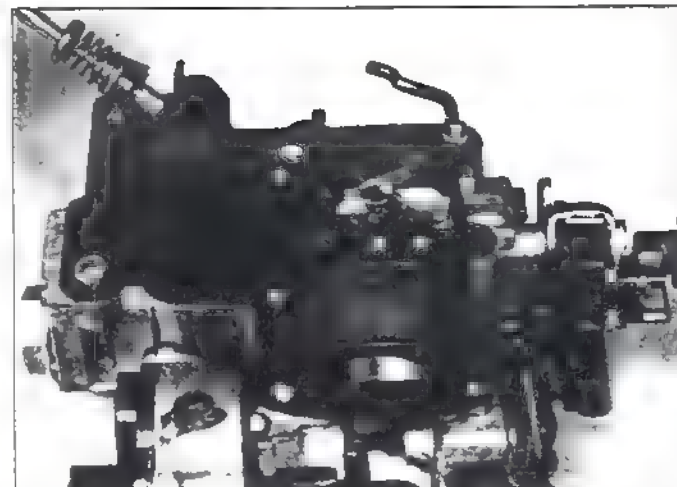
If so equipped, apply a light coat of silicone grease or engine oil to the TPS plunger and push it through the seal in the air horn so that about one-half of the plunger extends above the seal.

Before installing the air horn, apply a light coat of silicone grease or engine oil to the accelerator pump plunger stem to aid in slipping it through the seal in the air horn.

Rotate the fast idle cam to the Up position so it can be engaged with the lower end of the fast idle cam rod. While holding down on the pump plunger assembly, carefully lower the air horn onto the float bowl and guide the pump plunger stem through the seal.

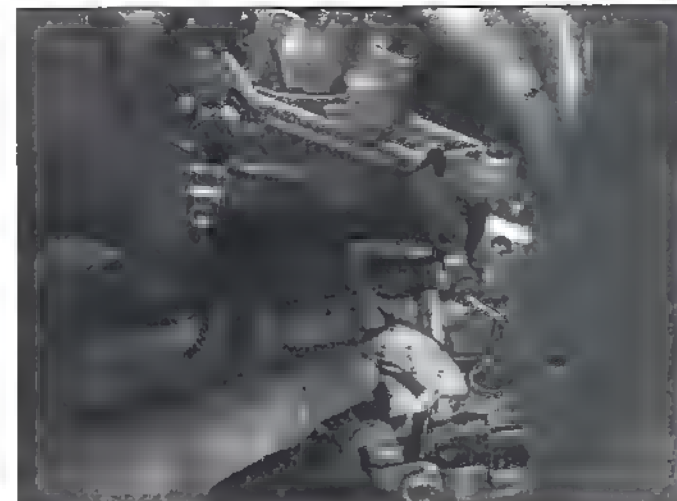


**7E.54** Install a new gasket on the float bowl. Again, make sure it is exactly the same as the one that was removed

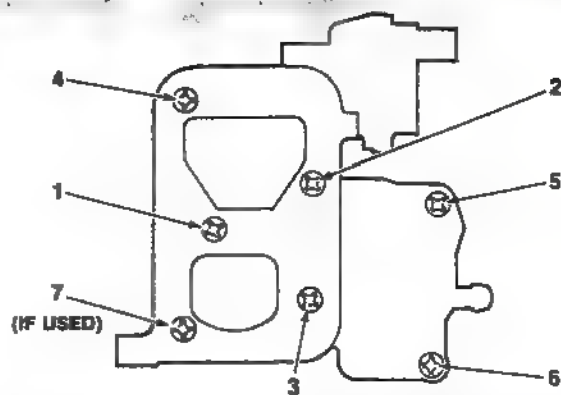


**7E.56** Reassemble the pump plunger assembly, lubricate the plunger cap with a light film of engine oil and install the pump plunger in the pump well.

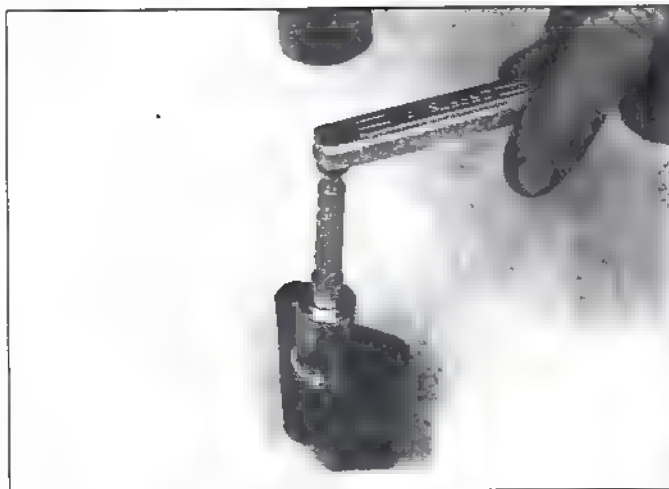
If used, remove the old pump plunger seal and retainer and the old TPS plunger seal and retainer from the air horn. Install new seals and retainers in both locations and lightly stake both seal retainers in three places other than the original staking locations.







**7E.58** Install the air horn retaining screws and washers, making sure the different length screws are inserted into their respective holes then tighten them in the sequence shown. Note: If so equipped, install a new seal in the recess of the air horn and attach the hot idle compensator valve.



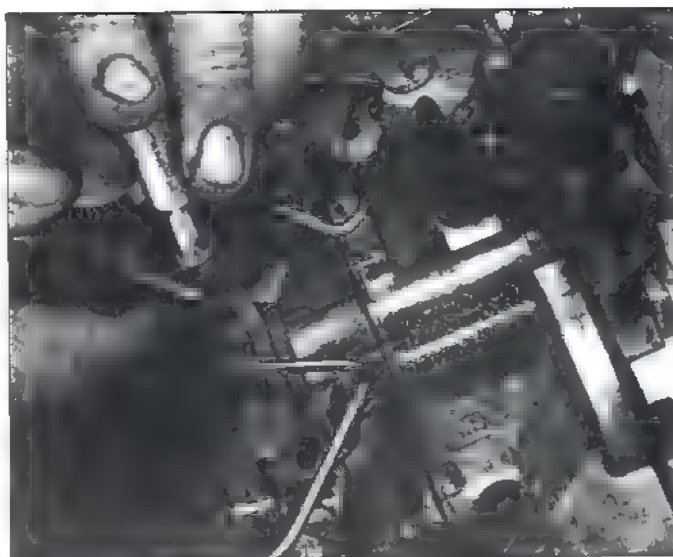
**7E.60** . . . then, using a hollow tool and a hammer, drive the retainer over the mixture control solenoid stem just far enough to retain the rubber seal, while leaving a slight clearance between them for seal expansion.

Apply a light coat of engine oil to the rubber seal and, using a new gasket, install the mixture control solenoid in the air horn. Use a slight twisting motion while installing the solenoid to help the rubber seal slip into the recess.

**7E.62** Reattach the primary and secondary vacuum break links and install the vacuum break and idle speed solenoid assemblies. Reconnect the vacuum break hoses.



**7E.59** Install a new rubber seal on the end of the mixture control solenoid stem . . .

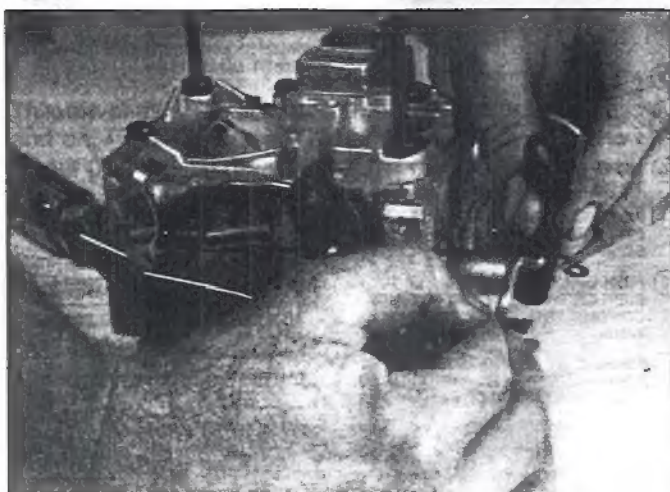


**7E.61** Attach a retaining clip to the intermediate choke rod to secure it to the choke lever.

Install a plastic bushing in the hole in the choke lever, with the small end facing out. Then, with the intermediate choke lever at the 12 o'clock position, install the intermediate choke rod in the bushing. Install a new retaining clip on the end of the rod. Use a broad, flat-blade screwdriver and a 3/16-inch socket. Make sure the clip is not seated tightly against the bushing and that the linkage moves freely.

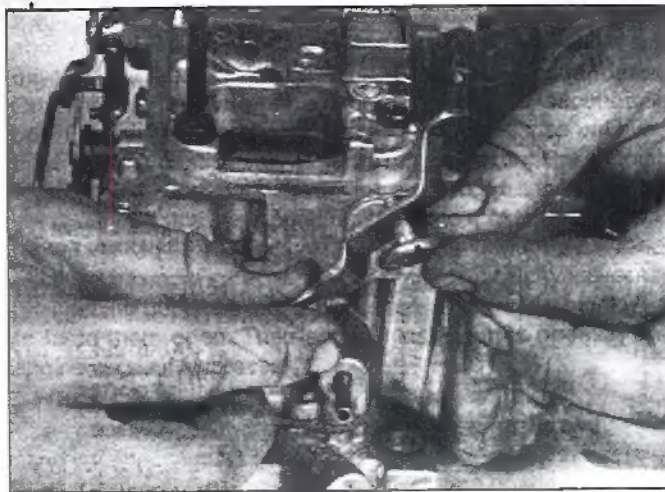




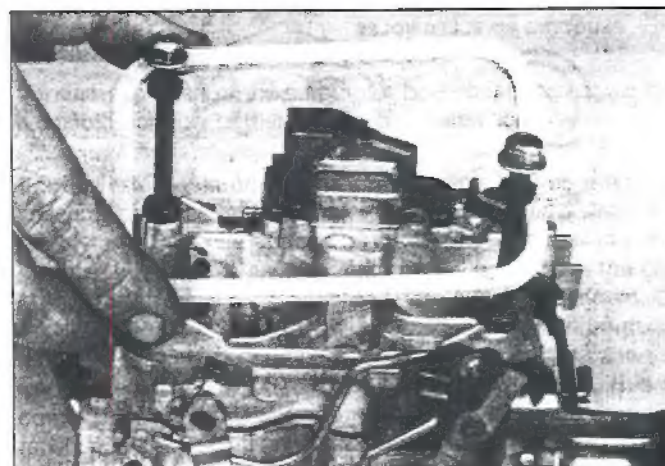


**7E.63** Engage the accelerator pump rod with the pump rod lever. Install a new retaining clip on the pump rod and install the pump lever on the air horn with the washer between the lever and the air horn.

Install the fuel filter with the hole facing toward the inlet nut. Place a new gasket on the inlet nut and install and tighten it securely. Take care not to over-tighten the nut, as it could damage the gasket, leading to a fuel leak.



**7E.64** Insert the pump lever mounting screw through the lever prior to installation

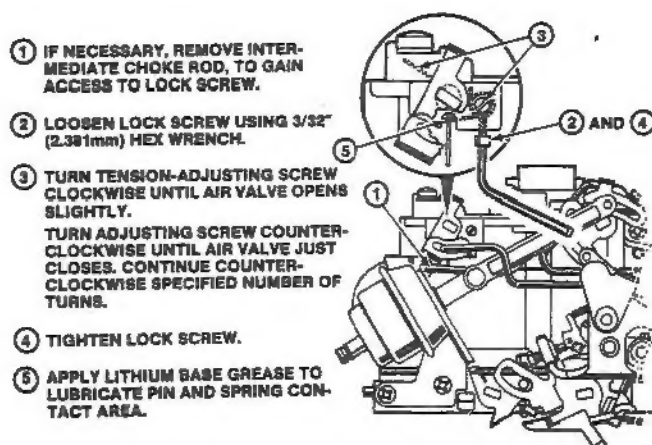


**7E.65** Install a new gasket on top of the air horn and install the ventscreen assembly on the air horn. Caution: Check that all linkage hook-ups have been made and that they do not bind. Adjust the external linkage.

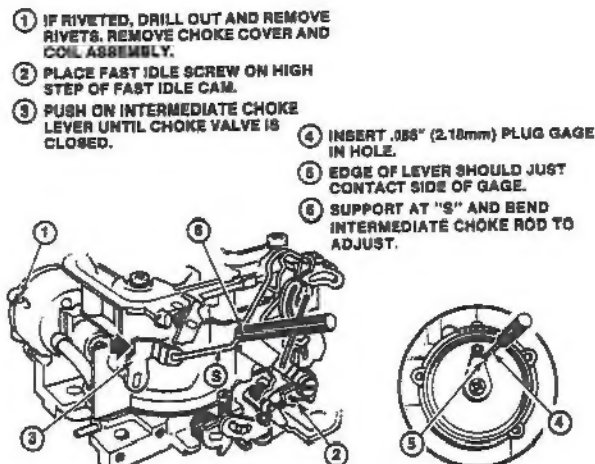
### Preliminary adjustments

**Note 1:** The following procedures require a few special tools, which are identified in the illustrations. These tools can usually be purchased at most auto parts stores or tool dealers.

**Note 2:** Be sure to check the adjustment procedures in the instruction sheet that is furnished with the overhaul kit. If there are any differences between the two procedures, be sure to use the procedures on the sheet included with the kit.

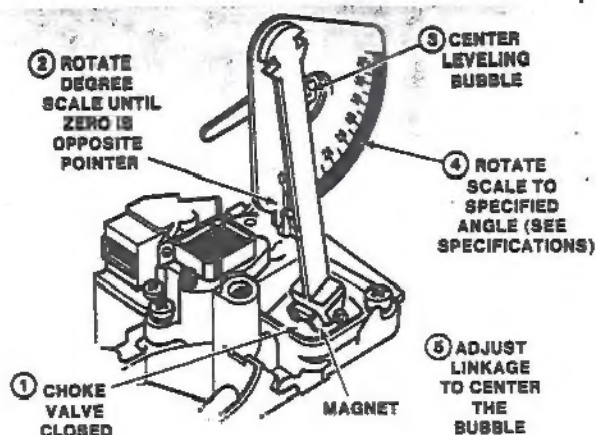


**7E.66** Air valve spring adjustment procedure



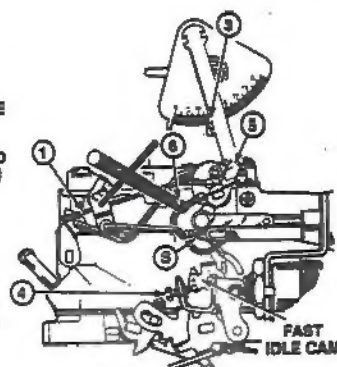
**7E.67** Choke coil lever adjustment procedure





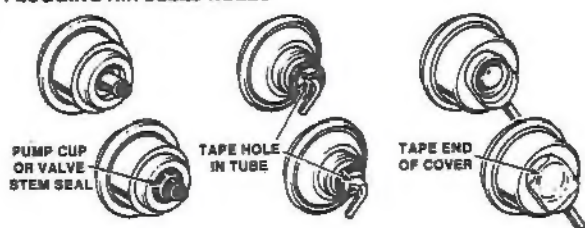
7E.68 Measuring the choke valve angle with an angle gauge

- ① ATTACH RUBBER BAND TO INTER-MEDIATE CHOKE LEVER.
- ② OPEN THROTTLE TO ALLOW CHOKE VALVE TO CLOSE.
- ③ SET UP ANGLE GAGE AND SET ANGLE TO SPECIFICATIONS.
- ④ PLACE FAST IDLE SCREW ON SECOND STEP OF CAM AGAINST RISE OF HIGH STEP.
- ⑤ PUSH ON CHOKE SHAFT LEVER TO OPEN CHOKE VALVE AND TO MAKE CONTACT WITH BLACK CLOSING TANG.
- ⑥ SUPPORT AT "S" AND ADJUST BY BENDING FAST IDLE CAM ROD UNTIL BUBBLE IS CENTERED.

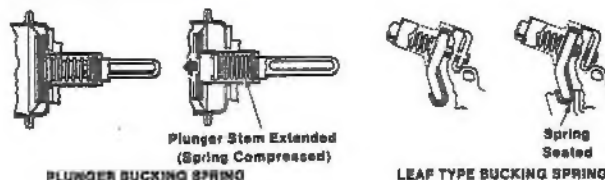


7E.69 Choke rod/fast idle cam adjustment procedure

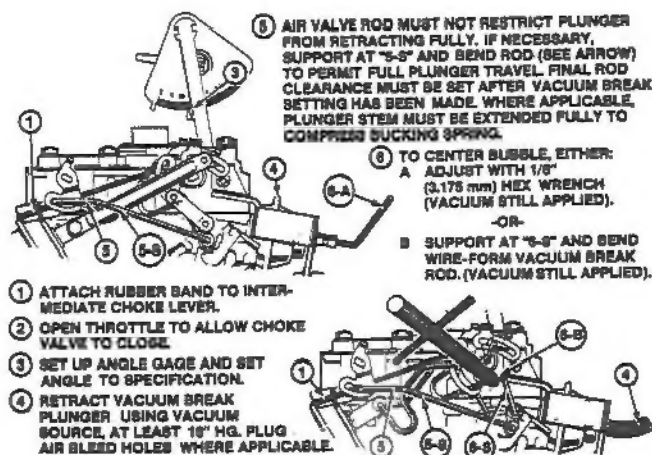
## PLUGGING AIR BLEED HOLES



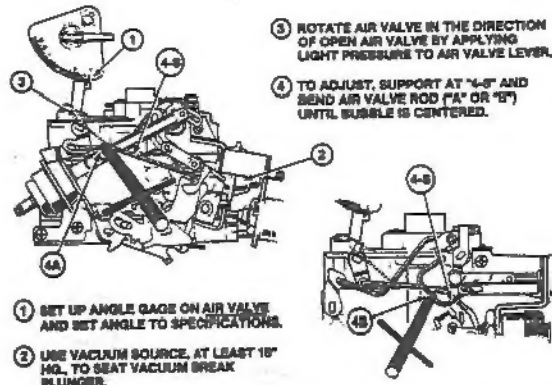
## BUCKING SPRINGS



7E.70 Method of plugging vacuum break air bleed holes for the next three adjustments

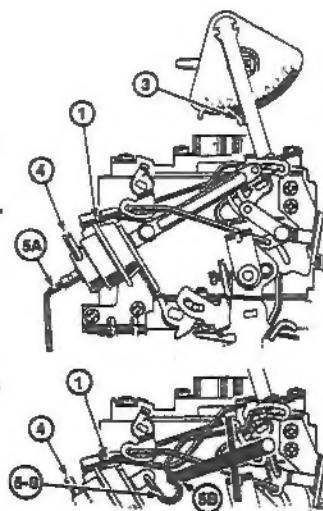


7E.71 Primary vacuum break adjustment procedure for models with dual vacuum break units



7E.72 Air valve link adjustment procedure

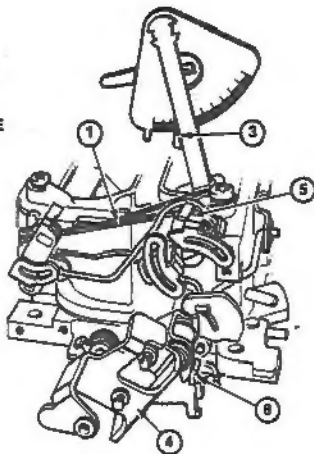
- ① ATTACH RUBBER BAND TO INTER-MEDIATE CHOKE LEVER.
- ② OPEN THROTTLE TO ALLOW CHOKE VALVE TO CLOSE.
- ③ SET UP ANGLE GAGE AND SET ANGLE TO SPECIFICATION.
- ④ RETRACT VACUUM BREAK PLUNGER USING VACUUM SOURCE, AT LEAST 18" HG. PLUG AIR BLEED HOLES WHERE APPLICABLE. WHERE APPLICABLE, PLUNGER STEM MUST BE EXTENDED FULLY TO COMPRESS BUCKING SPRING.
- ⑤ TO CENTER BUBBLE, EITHER:  
A. ADJUST WITH 1/8" (3.175 mm) HEX WRENCH (VACUUM STILL APPLIED).  
-OR-  
B. SUPPORT AT "S-S", BEND WIRE-FORM VACUUM BREAK ROD (VACUUM STILL APPLIED)



7E.73 Secondary vacuum break adjustment procedure

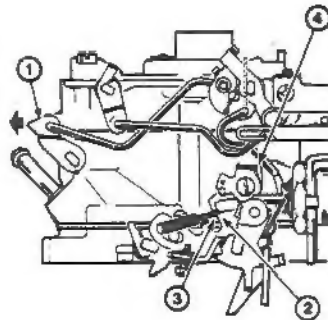


- ① ATTACH RUBBER BAND TO INTER-MEDIATE CHOKE LEVER.
- ② OPEN THROTTLE TO ALLOW CHOKE VALVE TO CLOSE.
- ③ SET UP ANGLE GAGE AND SET ANGLE TO SPECIFICATIONS.
- ④ HOLD THROTTLE LEVER IN WIDE OPEN POSITION.
- ⑤ PUSH ON CHOKE SHAFT LEVER TO OPEN CHOKE VALVE AND TO MAKE CONTACT WITH BLACK CLOSING TANG.
- ⑥ ADJUST BY BENDING TANG UNTIL BUBBLE IS CENTERED.



7E.74 Choke unloader adjustment procedure

- ① HOLD CHOKE VALVE WIDE OPEN BY PUSHING DOWN ON INTERMEDIATE CHOKE LEVER.
- ② OPEN THROTTLE LEVER UNTIL END OF SECONDARY ACTUATING LEVER IS OPPOSITE TOE OF LOCKOUT LEVER.
- ③ GAGE CLEARANCE - DIMENSION SHOULD BE .025".
- ④ IF NECESSARY TO ADJUST, BEND LOCKOUT LEVER TANG CONTACTING FAST IDLE CAM.



7E.75 Secondary lockout adjustment procedure

## On-vehicle adjustments

**Note 1:** The following procedures require a few special tools, which are identified in the illustrations. These tools can usually be purchased at most auto parts stores or tool dealers.

**Note 2:** Be sure to check the adjustment procedures in the instruction sheet that is furnished with the overhaul kit. If there are any differences between the two procedures, be sure to use the procedures on the sheet included with the kit.

After the carburetor is reinstalled and the fuel line, vacuum hoses and electrical connectors (if equipped) have been connected, there are several on-vehicle adjustments to be made. Hook up a tachometer in accordance with the manufacturer's instructions. On feedback models (E2SE) connect a dwellmeter (set on the six-cylinder mode) to the test connector in the mixture control solenoid harness as described in Chapter 5, illustration 5.14. Start the engine and allow it to reach normal operating temperature. It may be necessary to turn the idle speed screw in to maintain sufficient rpm so the engine doesn't stall. **Warning:** Be sure the vehicle is parked on a level surface, the parking brake is set, the wheels are blocked and the transmission is in Neutral (manual) or Park (automatic).

## Float level check

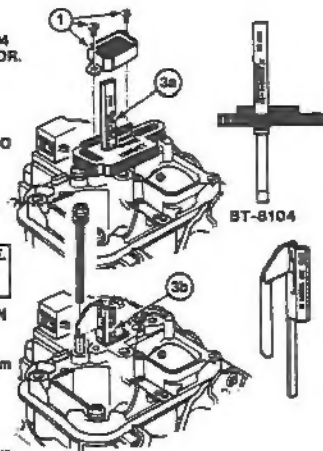
**Note:** If the carburetor has just been overhauled, the float setting will already be correct. However, the float level can be checked without disassembling the carburetor, which is helpful in diagnosing driveability problems, or just to double-check your work and make sure the float level has been properly set. If the float is not set to the proper level, it will be necessary to remove the air horn to adjust it.

Turn off the engine and remove the air horn vent stack. Start the engine and carefully insert the gauge into the proper hole in the air horn (see illustration), allowing it to float freely.

Observe the mark on the gauge directly at eye level as it lines up with the top of the casting at the vent slot. The setting should be within plus or minus 1/16-inch of the specified float level setting (see the specifications sheet furnished with the overhaul kit or the proper factory service manual).

If the setting is more than 1/16-inch out of specification, remove the air horn and adjust the float level to the specified setting for your particular application.

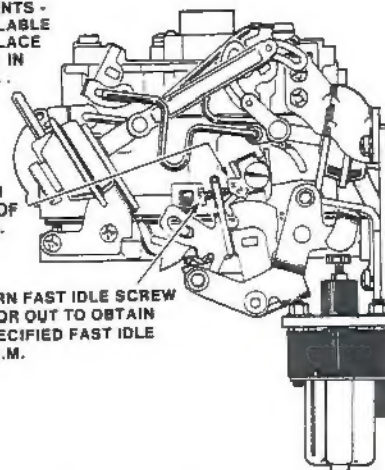
- ① REMOVE AIR HORN VENT STACK.
  - ② SELECT CORRECT GAGE FROM BT-8104 OR J-9789-135 SERIES FOR CARBURETOR.
  - ③ a USING BT-8104 GAGE SERIES, INSERT BRIDGE  
-OR-  
b USING J-9789-135 GAGE SERIES, REMOVE AIR HORN SCREW NEXT TO OPEN VENT.
  - ④ WITH ENGINE RUNNING AT IDLE, CHOKE WIDE-OPEN, INSERT GAGE IN BRIDGE OR GUIDE HOLE, AND ALLOW IT TO FLOAT FREELY.
- NOTICE:** DO NOT PRESS DOWN ON GAGE. FLOODING OR FLOAT DAMAGE COULD RESULT.
- ⑤ OBSERVE AT EYE LEVEL THE MARK ON GAGE THAT LINES UP WITH TOP OF BRIDGE OR AIR HORN CASTING. SETTING SHOULD BE WITHIN  $\pm 1.588\text{mm}$  (1/16") OF SPECIFIED FLOAT LEVEL SETTING.
  - INCORRECT FUEL PRESSURE WILL ADVERSELY AFFECT FUEL LEVEL.
  - ⑥ IF NECESSARY, REMOVE AIR HORN AND ADJUST FLOAT LEVEL TO SPECIFICATION.



7E.76 External float level check procedure

## Fast idle speed adjustment

- ① PREPARE VEHICLE FOR ADJUSTMENTS - SEE EMISSION LABEL ON VEHICLE. PLACE TRANSMISSION IN PARK/NEUTRAL.
- ② PLACE FAST IDLE SCREW ON HIGHEST STEP OF FAST IDLE CAM.
- ③ TURN FAST IDLE SCREW IN OR OUT TO OBTAIN SPECIFIED FAST IDLE R.P.M.

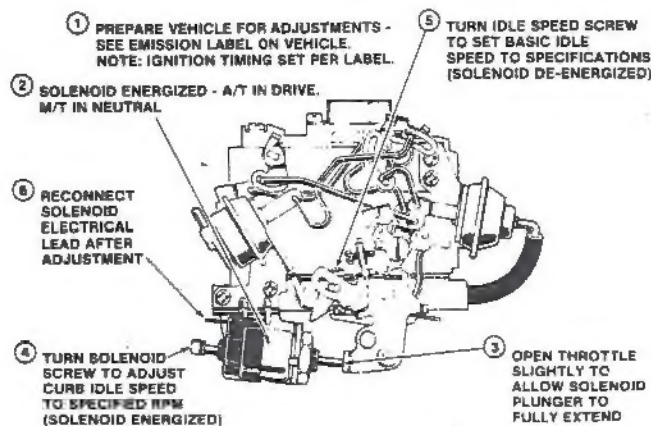


7E.77 Fast idle speed adjustment details

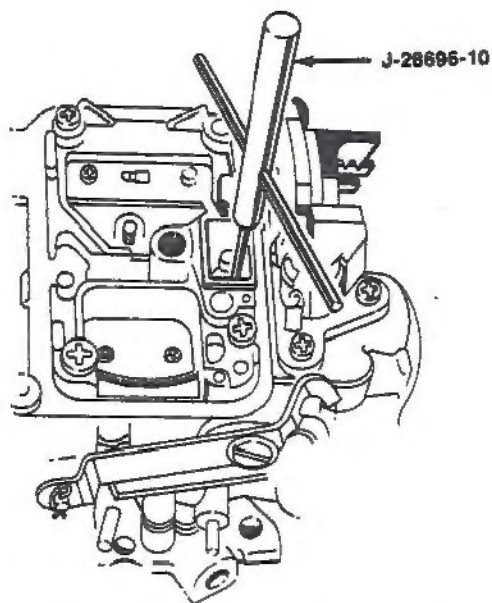


### Curb idle speed adjustment (non-feedback models)

**Note:** For the base (curb) idle speed adjustment procedure on feedback models, refer to the Idle Speed Control (ISC) system adjustment described under Feedback carburetor adjustments.



7E.78 Idle speed adjustment details



7E.79 Using the special tool, turn the lean mixture screw in or out, as necessary, to obtain the desired dwellmeter reading at 3,000 rpm

### Idle mixture adjustment

Refer to Chapter 7, Part D, for the idle mixture adjustment procedure, but note that on these carburetors there is only one mixture screw.

### Feedback carburetor adjustments

#### Mixture adjustment procedure

1 Remove the vent stack cover from the carburetor. Detach the bowl vent hose at the carburetor and the vent hose at the "tee" fitting (if equipped) just downstream of the carburetor, then plug the vent hose. Disconnect the EGR and canister purge hoses from the carburetor and plug the carburetor ports. Also be sure to disconnect and plug the vacuum hose to the TVS in the air cleaner.

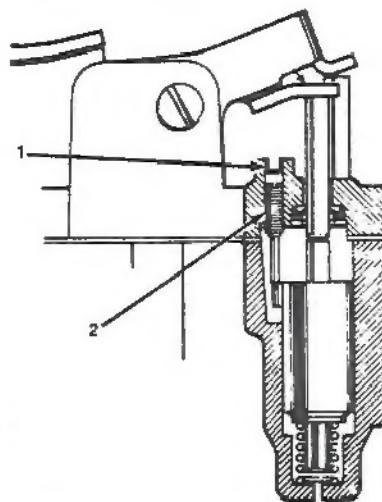
2 Connect a tachometer and a dwellmeter following the procedure described in Chapter 5 under *Mixture Control (M/C) solenoid*. With the engine at normal operating temperature, run the engine up to 3,000 rpm and hold it there, allowing the dwellmeter needle to stabilize.

3 Using the special tool (available at most auto parts stores), turn the lean mixture screw (**see illustration**) to obtain an average dwell reading of 35 degrees. If the dwell reading is too low, turn the screw out. If it's too high, turn the screw in. **Note:** Make these adjustments slowly, allowing the needle to stabilize between adjustments (a 5-degree fluctuation of the needle is considered stabilized).

4 Allow the engine to return to idle, then adjust the idle speed to 700 rpm (in Park or Neutral) with the engine cooling fan Off.

5 Adjust the idle mixture screw to obtain an average dwell reading of 25 degrees. If the dwellmeter reading is too low, turn the screw out; if it's too high, turn it in.

6 Run the engine at 3,000 rpm again and check the dwellmeter reading - it should be fluctuating, but have an average reading of 35-degrees. If not, readjust the lean mixture screw



7E.80 To gain access to the TPS adjusting screw (2), drill a small hole in the concealment plug (1), thread a self-tapping screw into the hole and pry up on the screw head to remove the plug

by performing Step 2 again.

7 Reconnect all disconnected hoses and set the idle speed, if it is now out of specification.

### Idle Speed Control (ISC) system

Refer to Chapter 7, Part D, for the ISC adjustment procedure, but refer to illustration 7E.78 in this Chapter for the location of the curb idle speed screw.

### Throttle Position Sensor

Refer to Chapter 7, Part D, for the adjustment procedure, but refer to the accompanying illustration in this Chapter for the location of the adjustment screw (**see illustration**). Also, turn the TPS adjustment screw to obtain a voltmeter reading of 0.26 volts instead of the value given in Chapter 7D.